

ABSTRACT

A system and method for treating feedstocks containing solids, sludges or slurries that contain organics includes introducing the feedstock into a desorption chamber. In the desorption chamber, the temperature and pressure of the feedstock are elevated to volatilize a portion of the feedstock and thereby separate the feedstock into a volatile portion containing organics and a residue portion. Steam, water or oxidants can be injected into the desorption chamber to aid in the volatilization process. From the desorption chamber, the volatile portion of the feedstock is transferred to a reactor for hydrothermal treatment to oxidize or reform the organics in the volatile portion. In the hydrothermal reactor, the volatile portion may be reacted with excess oxidant and auxiliary fuel at a temperature between approximately 1000°F and approximately 1800°F and a pressure of between approximately 20 atmospheres and approximately 200 atmospheres.

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